

**REMARKS**

In this Response, Applicant further amends claims 1 and 7. No new matter has been added. Support for the claim amendments can be found at least in the Specification at page 15, line 26 – page 16, line 18 and page 20, line 23 – page 23, line 9 and Figures 9A-E.

Claims 1-7 are currently pending, of which claim 1 is independent. Applicant respectfully submits that all of the pending claims are in condition for allowance.

**I. Claim Amendments**

Claim 1 is amended to recite:

“wherein when an engine of said motorcycle starts, said request signal is output in response to a starting operation of said engine, a presence of said response signal is observed based on said output of said request signal, said warning lamp is immediately driven if said response signal is not detected within a first predetermined period of time, and

wherein during driving after said engine starts, said request signal is output every fixed interval of time, a presence of said response signal is observed based on said output of said request signal, and a count value is updated if said response signal is not detected within a second predetermined period of time, and said warning lamp is driven when said count value becomes higher than a predetermined value.”

When an engine of a motorcycle starts, a request signal is output in response to a starting operation of the engine. A presence of the response signal is observed based on the output of the request signal. The warning lamp is immediately driven if the response signal is not detected within a first predetermined period of time. Thus, if a user intends to start an engine while dropping an electronic key, the user can immediately recognize that the electronic key has dropped before the engine starts. Therefore, it is possible to reduce wasted power consumption. Further, for instance, in the case of emergent vandalism or theft of a motorcycle, it is possible to warn by immediately driving the warning lamp.

In contrast, during driving after the engine starts, the request signal is output every fixed interval of time. A presence of the response signal is observed based on the output of the request signal. A count value is updated if the response signal is not detected within a second

predetermined period of time, and the warning lamp is driven when the count value becomes higher than a predetermined value. Thus, if a user drops an electronic key during running with a motorcycle, disconnection of a receiving state of the response signal is observed and a warning lamp is lit, so that it is possible to inform the user of the dropping of the electronic key. Therefore, the user can immediately recognize that the electronic key has dropped. Consequently, it is possible to prevent the user from running with the motorcycle after losing the electronic key.

Additionally, temporal communication failure may occur due to influence of vibration and the like while driving the motorcycle. For detecting such a failure, a count value is updated if the response signal is not detected within the second predetermined period of time, and the warning lamp is driven when the count value becomes higher than a predetermined value. Therefore, since it is possible to distinguish such communication failure from the dropping of the electronic key, malfunction or unnecessary operation of a warning lamp can be avoided.

Accordingly, in exemplary embodiments, the timing to drive the warning lamp when the engine starts is different from the timing to drive it while the motorcycle is running (during driving). Thus, an electronic key system suitable for a motorcycle can be obtained.

## **II. Rejection of Claims 1 and 7 under 35 U.S.C. § 103(a)**

Claims 1 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent Number 6,515,580 to Isoda et al. (hereafter “Isoda”) in view of United States Patent Number 5,973,611 to Kulha et al. (hereafter “Kulha”) and in view of United States Patent Number 5,838,227 to Murray (hereafter “Murray”). Applicant respectfully traverses the 35 U.S.C. § 103(a) rejection of claims 1 and 7 as set forth below.

Applicant respectfully submits that Isoda, Kulha and Murray references, alone or in any combination, fail to teach or suggest “when an engine of said motorcycle starts, said request signal is output in response to a starting operation of said engine, a presence of said response signal is observed based on said output of said request signal, said warning lamp is immediately driven if said response signal is not detected within a first predetermined period of time; during driving after said engine starts, said request signal is output every fixed interval of time, a

presence of said response signal is observed based on said output of said request signal, and a count value is updated if said response signal is not detected within a second predetermined period of time, and said warning lamp is driven when said count value becomes higher than a predetermined value,” as recited in claim 1 and claim 7 which depends from claim 1.

**(a) “during driving after said engine starts, said request signal is output every fixed interval of time”**

Applicant respectfully submit that Isoda, Kulha and Murray references, alone or in any combination, fail to teach or suggest “during driving after said engine starts, said request signal is output every fixed interval of time,” as recited in claims 1 and 7.

The Isoda reference relates to an antitheft device for vehicles. A vehicle includes a main switch 21 that is switched by a suitably coded key 22 (Isoda, Figure 1). The main switch 21 includes an antenna 23 that receives signals from a transponder carried on the key 22 so as to determine if an authorized user is operating the vehicle (Isoda, Figure 1). The main switch 21 and antenna 23 may be mounted near the handlebar assembly 15 (Isoda, Figure 1).

However, the Isoda reference does not teach or suggest that the key 22 transmits a request signal *every fixed interval of time*, as required by claims 1 and 7.

The addition of the Kulha reference fails to cure this deficiency.

The Kulha reference relates to a hands-free remote entry system for vehicles. The system includes a base transceiver with wake-up sensors for automatically detecting an object (Kulha, abstract). Once an object is detected, a transmitter within the base transceiver transmits a wake-up/data signal to a fob transceiver (Kulha, abstract). A wake-up receiver within the fob transceiver receives the wake-up/data signal (Kulha, abstract). Upon receipt of the wake-up/data signal, the fob transceiver transmits an identification/data signal, via a transmitter, back to a receiver in the base transceiver (Kulha, abstract). In response to receiving the identification/data signal, output drivers from the base transceiver actuate a door-lock system and an auto-theft system (Kulha, abstract).

However, the Kulha reference does not teach or suggest that the fob transceiver or the base transceiver transmits a request signal *every fixed interval of time*, as required by claims 1 and 7.

The addition of the Murray reference fails to cure this deficiency.

The Murray reference relates to a radio-controlled engine kill switch. A receiver 14 installed in a water craft interacts with transmitters 12 worn by the operator of the water craft and each passenger. A radio frequency (RF) contact is maintained continuously between the receiver 14 and the transmitters 12. In the event the RF contact is broken, the engine is immediately shut down. The receiver 14 includes a signal/warning strobe 22 which is automatically activated by the deactivation of the transmitter 12 signal. See Murray, column 4, lines 10-24, column 7, lines 19-25 and column 10, lines 32-49.

However, the Murray reference does not teach or suggest that the RF signal is output *every fixed interval of time*, as required by claims 1 and 7. For example, the Murray reference does not teach or suggest that a request RF signal is output every fixed interval of time. This is because the receiver and the transmitters of the Murray reference output a *continuous* signal, and this signal is not output *every fixed interval of time*.

**(b) “... said warning lamp is immediately driven if said response signal is not detected within a first predetermined period of time; ... a count value is updated if said response signal is not detected within a second predetermined period of time, and said warning lamp is driven when said count value becomes higher than a predetermined value”**

Applicant respectfully submits that the Isoda, Kulha and Murray references, alone or in any combination, fail to teach or suggest “said warning lamp is immediately driven if said response signal is not detected within a first predetermined period of time; a count value is updated if said response signal is not detected within a second predetermined period of time, and said warning lamp is driven when said count value becomes higher than a predetermined value,” as recited in claims 1 and 7.

The Isoda reference does not teach or suggest a warning lamp that is driven if a response signal is not detected within a predetermined period of time, as required by claims 1 and 7. For example, the Isoda reference does not teach or suggest that a warning lamp is driven if a response signal from the key 22 is not detected at the antenna 23 within a predetermined period of time.

The addition of the Kulha reference fails to cure this deficiency.

The Kulha reference does not teach or suggest a warning lamp that is driven if a response signal is not detected within a predetermined period of time, as required by claims 1 and 7. For example, the Kulha reference does not teach or suggest that a warning lamp is driven if a response signal from the fob transceiver is not received at the base transceiver within a predetermined period of time.

The addition of the Murray reference fails to cure this deficiency.

The Examiner cites lamp 306 in the Murray reference as teaching or suggesting a warning lamp, as required by claims 1 and 7. However, this lamp in the Murray reference is a pilot lamp, not a warning lamp. The pilot lamp is green when a transmitter is attached to a receiver. Once the transmitter is removed from the receiver, the pilot lamp turns red to indicate that a link exists between the transmitter and the receiver.

The Murray reference does not teach or suggest keeping track of a first predetermined period of time, and driving the lamp 306 if a response signal is not detected within the first predetermined period of time.

In addition, the Murray reference does not teach or suggest keeping track of a second predetermined period of time, updating a count value if a response signal is not detected within the second predetermined period of time, keeping track of whether the count value is higher than a predetermined value, and driving the lamp 306 when the count value becomes higher than the predetermined value.

The Examiner also cites lamp 22 in the Murray reference as teaching or suggesting a warning lamp, as required by claims 1 and 7. The lamp 22 flashes when a signal from any

transmitter 12 is broken. However, the Murray reference does not teach or suggest keeping track of a first predetermined period of time, and driving the lamp 22 if a response signal is not detected within the first predetermined period of time.

In addition, the Murray reference does not teach or suggest keeping track of a second predetermined period of time, updating a count value if a response signal is not detected within the second predetermined period of time, keeping track of whether the count value is higher than a predetermined value, and driving the lamp 22 when the count value becomes higher than the predetermined value.

Furthermore, Figure 6 of the Murray reference shows a flowchart of a verification process of the transmitter and the receiver. Figure 7 of the Murray reference shows an operation flowchart of the transmitter.

According to Figure 6 and its description in the specification, whether an RF signal (a code showing an address) transmitted from the transmitter is correct is verified. If the RF signal is not sent or an address is wrong, a motor is not driven (i.e. a boat is not driven). A double check routine is adopted to prevent wrong verification. According to Figure 7 and its description in the specification, only operations as to a water sensor are described. That is, when water is detected, a transmitter is turned off. When the transmitter is turned off, the boat is stopped based on the above-mentioned basic action.

Figure 6 and 7 show several words and terms about time, such as “Time increment,” “Timer over flow” and “Over flow (1.5 sec).” However, there is no specific description about such time in the specification. In the flow charts, every time “Time over flow” in Figure 6 or “Over flow” in Figure 7 is judged, “Time increment” is performed in the preceding step. Thus, we deem that “Timer increment” merely represents timing processing. Generally, a timer counts a clock signal from start of timing. However, in the Murray reference, timing is unusually performed in “Timer increment.” Thus, even a person of ordinary skill in the art could not understand the meaning of the above terms relating to time, such as “Timer increment” or “Timer over flow” in Figures 6 and 7.

As such, the Murray reference does not teach or suggest keeping track of a first predetermined period of time, and driving a warning lamp if a response signal is not detected within the first predetermined period of time.

In addition, the Murray reference does not teach or suggest keeping track of a second predetermined period of time, updating a count value if a response signal is not detected within the second predetermined period of time, keeping track of whether the count value is higher than a predetermined value, and driving a warning lamp when the count value becomes higher than the predetermined value.

**(c) “when an engine of said motorcycle starts... said warning lamp is immediately driven if said response signal is not detected within a first predetermined period of time; during driving after said engine starts... a count value is updated if said response signal is not detected within a second predetermined period of time, and said warning lamp is driven when said count value becomes higher than a predetermined value”**

Applicant respectfully submits that Isoda, Kulha and Murray references, alone or in any combination, fail to teach or suggest “when an engine of said motorcycle starts... said warning lamp is immediately driven if said response signal is not detected within a first predetermined period of time; during driving after said engine starts... a count value is updated if said response signal is not detected within a second predetermined period of time, and said warning lamp is driven when said count value becomes higher than a predetermined value,” as recited in claims 1 and 7.

None of the Isoda, Kulha and Murray references teaches or suggests driving a warning lamp under two different timing regimes: (1) the warning lamp is driven after *a first predetermined period of time when the engine starts*, and (2) the warning lamp is driven after *a second predetermined period of time during driving*. Even if the Isoda, Kulha and Murray references were combined, one of ordinary skill in the art could not derive a structure in which the timing to drive the warning lamp *when the engine starts* is different from the timing *while the motorcycle is running*.

For at least the reasons set forth above, Applicant respectfully submits that the Isoda, Kulha and Murray references, alone or in any combination, fail to teach or suggest each and every feature of claims 1 and 7. As such, Applicant respectfully submits that claim 1 defines over the art of record. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the U.S.C. § 103(a) rejection of claims 1 and 7.

Applicant also respectfully requests withdrawal of the finality of the instant Office Action since the Murray reference is different from the references cited in the previous Office Action in its features.

### **III. Rejection of Claims 2 and 3 under 35 U.S.C. § 103(a)**

Claims 2 and 3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Isoda, Kulha and Murray references as applied to claim 1, and in view of United States Patent Number 6,078,293 to Yamamoto (hereafter “Yamamoto”). Applicant respectfully traverses the 35 U.S.C. § 103(a) rejection of claims 2 and 3 as set forth below.

Claims 2 and 3 depend upon independent claim 1 and, as such, include all the features of claim 1.

Applicant respectfully submits that the Isoda, Kulha, Murray and Yamamoto references, alone or in any combination, fail to teach or suggest at least the following features of independent claim 1, from which claims 2 and 3 depend: “when an engine of said motorcycle starts, said request signal is output in response to a starting operation of said engine, a presence of said response signal is observed based on said output of said request signal, said warning lamp is immediately driven if said response signal is not detected within a first predetermined period of time; during driving after said engine starts, said request signal is output every fixed interval of time, a presence of said response signal is observed based on said output of said request signal, and a count value is updated if said response signal is not detected within a second predetermined period of time, and said warning lamp is driven when said count value becomes higher than a predetermined value.”

As discussed above in connection with claim 1, Applicant respectfully submits that the Isoda, Kulha and Murray references, alone or in any combination, do not teach or suggest the above features of claims 2 and 3.

The addition of the Yamamoto reference fails to cure this deficiency.

The Yamamoto reference relates to an antenna 1A mounted inside of a switch main body 1C of a column switch 1 supporting a steering wheel 2 (Yamamoto, abstract).

However, the Yamamoto reference does not teach or suggest “when an engine of said motorcycle starts, said request signal is output in response to a starting operation of said engine, a presence of said response signal is observed based on said output of said request signal, said warning lamp is immediately driven if said response signal is not detected within a first predetermined period of time; during driving after said engine starts, said request signal is output every fixed interval of time, a presence of said response signal is observed based on said output of said request signal, and a count value is updated if said response signal is not detected within a second predetermined period of time, and said warning lamp is driven when said count value becomes higher than a predetermined value,” as recited in claims 2 and 3.

For at least the reasons set forth above, Applicant respectfully submits that the Isoda, Kulha, Murray and Yamamoto references, alone or in any combination, fail to teach or suggest each and every feature of claims 2 and 3. As such, Applicant respectfully submits that claims 2 and 3 define over the art of record. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the U.S.C. § 103(a) rejection of claims 2 and 3.

#### **IV. Rejection of Claims 4-6 under 35 U.S.C. § 103(a)**

Claims 4-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Isoda, Kulha and Murray references as applied to claim 1, and in view of United States Patent Number 4,132,994 to Caldwell (hereafter “Caldwell”). Applicant respectfully traverses the 35 U.S.C. § 103(a) rejection of claims 4-6 as set forth below.

Claims 4-6 depend upon independent claim 1 and, as such, include all the features of claim 1.

Applicant respectfully submits that the Isoda, Kulha, Murray and Caldwell references, alone or in any combination, fail to teach or suggest at least the following features of independent claim 1, from which claims 4-6 depend: “when an engine of said motorcycle starts, said request signal is output in response to a starting operation of said engine, a presence of said response signal is observed based on said output of said request signal, said warning lamp is immediately driven if said response signal is not detected within a first predetermined period of time; during driving after said engine starts, said request signal is output every fixed interval of time, a presence of said response signal is observed based on said output of said request signal, and a count value is updated if said response signal is not detected within a second predetermined period of time, and said warning lamp is driven when said count value becomes higher than a predetermined value.”

As discussed above in connection with claim 1, Applicant respectfully submits that the Isoda, Kulha and Murray references, alone or in any combination, fail to teach or suggest the above features of claims 4-6.

The addition of the Caldwell reference fails to cure this deficiency.

The Caldwell reference relates to a radio antenna 22 mounted along the edge of a windshield 18 (Caldwell, abstract).

However, the Caldwell reference does not teach or suggest “when an engine of said motorcycle starts, said request signal is output in response to a starting operation of said engine, a presence of said response signal is observed based on said output of said request signal, said warning lamp is immediately driven if said response signal is not detected within a first predetermined period of time; during driving after said engine starts, said request signal is output every fixed interval of time, a presence of said response signal is observed based on said output of said request signal, and a count value is updated if said response signal is not detected within a second predetermined period of time, and said warning lamp is driven when said count value becomes higher than a predetermined value,” as recited in claims 4-6.

For at least the reasons set forth above, Applicant respectfully submits that the Isoda, Kulha, Murray and Caldwell references, alone or in any combination, fail to teach or suggest

each and every feature of claims 4-6. As such, Applicant respectfully submits that claims 4-6 define over the art of record. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the U.S.C. § 103(a) rejection of claims 4-6.

**CONCLUSION**

In view of the foregoing amendments and remarks, Applicant believes that the pending application is in condition for allowance.

Any fee due is authorized to be charged to our Deposit Account No. 12-0080 from which the undersigned is authorized to draw. If a requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. § 1.136(a) for an extension of time for as many months as are required to render this submission timely.

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Respectfully submitted,

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